

517,104
Rec'd PCT/PTO 07 DEC 2004

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number
WO 2004/007509 A1

(51) International Patent Classification⁷: **C07F 15/04**,
15/00, C08F 10/00

(21) International Application Number:
PCT/US2003/022356

(22) International Filing Date: 17 July 2003 (17.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/396,370 17 July 2002 (17.07.2002) US

(71) Applicant (for all designated States except US): **EXXON-MOBIL CHEMICAL PATENTS INC.** [US/US]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US).

(71) Applicant (for US only): **CHERKASOV, Vladimir, K.** [RU/RU]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **DRUZHKOV, Nikolay, O.** [RU/RU]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US). **TEPLOVA, Irina, A.** [RU/RU]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US). **GLUSHAKOVA, Valentina, N.** [RU/RU]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US). **SKORODUMOVA, Nina, A.** [RU/RU]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US). **ABAKUMOV, Gleb, A.** [RU/RU]; 5200 Bayway Drive, Baytown, TX 77520-2101 (US). **ZHAO, Balyi** [US/US]; 3014 Hickory Falls Drive, Kingwood, TX 77345 (US). **BERLUCHE, Enock** [US/US]; 55 Peddlers Lane, Phillipsburg, NJ 08865 (US). **SCHULZ,**

Donald, N. [US/US]; P.O. Box 58, Valley Crest Rd, Annandale, NJ 05801 (US). **BAUGH, Lisa, S.** [US/US]; 71 Manners Road, Ringoes, NJ 08551 (US). **BALLINGER, Cynthia, A.** [US/US]; 21407 Park Downe Lane, Katy, TX 77450 (US). **SQUIRE, Kevin, R.** [US/US]; 2111 Seven Maples Drive, Kingwood, TX 77345 (US). **CANICH, Jo Ann, M.** [US/US]; 14710 Mesa Verde Drive, Houston, TX 55059 (US). **BUBNOV, Michael, P.** [RU/RU]; Zvezdinka str. 3-74, Nizhnii Novgorod (RU).

(74) Agents: **BELL, Catherine, L.** et al.; ExxonMobil Chemical Company, P.O. Box 2149, Baytown, TX 77522-2149 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LATE TRANSITION METAL CATALYSTS FOR OLEFIN POLYMERIZATION AND OLIGOMERIZATION

(57) Abstract: This invention relates to a transition metal compound represented by the formula LMX wherein M is a Group 3 to 11 metal L is a bulky bidentate or tridentate neutral ligand that is bonded to M by two or three heteroatoms and at least one heteroatom is nitrogen; X is a substituted or unsubstituted catecholate ligand provided that the substituted catecholate ligand does not contain a 1,2-diketone functionality.

WO 2004/007509 A1